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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,701	03/08/2001	Anja Klein	112740163	4186
29177	7590	11/02/2004		
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			EXAMINER KHUONG, LEE T	
			ART UNIT 2665	PAPER NUMBER

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,701

Applicant(s)

KLEIN ET AL.

Examiner

Lee Khuong

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/8/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 15-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder et al (US 5,828,659), hereinafter referred as Teder, in view of Jamal et al (US 5,930,366), hereinafter referred as Jamal.

Regarding claims 15 and 28, Teder discloses a method and radio communication system for providing a control channel:

assigning at least one channel which forms the control channel to a base station in order to transmit control information (see Fig. 5, col. 8, lines 9-12, RNC sends time offset data to the BS2 through the control channel).

Teder does not disclose expressly:

- a) *transmitting at least one synchronization sequence by the base station,*
- b) *at least one channel corresponding to at least one synchronization sequence, and*
- c) *an order of a plurality of the synchronization sequences;*
- d) *receiving, at a subscriber station, the at least one synchronization sequence; and*
- e) *determining, via the subscriber station, a configuration of the control channel based on at least one of the recognized synchronization sequence which designates the at least one channel and*
- f) *determining the recognized order of the plurality of synchronization sequences.*

Jamal discloses a method and radio communication system for providing a control channel:

- a) *transmitting at least one synchronization sequence by the base station (see Fig. 1, col. 2, lines 33-47, a base station transmits pilot code C_p of length N_p chips to a mobile station so the mobile station can synchronize itself to the timing reference of that base station),*
- b) *at least one channel corresponding to at least one synchronization sequence(see col. 2, lines 33-47, base station broadcasts pilot code C_p that associates a synchronized channel to the mobile station)*
- c) *an order of a plurality of the synchronization sequences (see Fig. 4, col. 4, lines 28-31, each time slot has a repeated pilot code/synchronized sequence C_p and a different spread code /synchronized sequence C_s . Each frame has multiple time slots);*

d) *receiving, at a subscriber station, the at least one synchronization sequence (see col. 4, lines 32-35, a mobile station obtain its pilot code timing within a frame by applying a cp matched filter to a received signal); and*

e) *determining, via the subscriber station, a configuration of the control channel based on at least one of the recognized synchronization sequence which designates the at least one channel(see col. 4, lines 32-35, a mobile station obtain its pilot code timing within a frame by applying a cp matched filter to a received signal) and*

f) *determining the recognized order of the plurality of synchronization sequences (see col. 4, lines 39-46, the mobile station correlates the set of known framing synchronizing codes Cs to the received signal at the locations of framing synchronization codes).*

One skill in the art would recognize the advantage of using Jamal's teaching in order to obtain the above described advantage in the system of Teder.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine access timing of Jamal with Teder.

The motivation for doing so would have been to obtain synchronization information that providing efficiency for a spread spectrum communication system relating to synchronization code transmission for a plurality of slots.

Therefore, it would have been obvious to combine Jamal with Teder to obtain the invention as specified in claims 15 and 28.

Regarding claims 16 and 17, Jamal discloses the configuration of the control channel relates to a variable number (see Fig. 5; slot S_0 ; sequence codes C_p , C_{s_0} , C_{slci_0}) of the at least one channel (see Fig. 5, C_{slci_0}) being designated by at least one of time slots (see Fig. 5, S_0 , spread codes, C_{s_0} , and a combination of a scrambling code (see Fig. 5, C_p) and a code (see Fig. 5, C_{slci_0}) designating the channel.

Regarding claim 18, Jamal discloses the coding of the configuration of the control channel (see col. 3, lines 52-54, BCCH is the control channel) via at least one of the selection and the order of the synchronization sequences extends over a plurality of time slots (see Fig. 5, T_p/S_0 , T_p/S_1 , see col. 3, lines 6-9, pilot code C_p is selected at the length of N_p in chips that matched the filter implemented in the mobile station).

Regarding claim 19, this claim has similar limitation b of claim 1. Therefore, it is rejected under Jamal for the same reason set forth in the rejection of claim 1.

Regarding claim 20, Jamal discloses the synchronization sequences are transmitted with less power than the control information (see col. 3, lines 10-13, limit the power of pilot code signal with other spread spectrum transmitted signals).

Regarding claim 21, Jamal discloses the synchronization sequences are unmodulated orthogonal gold codes (see col. 13, lines 6-9).

Regarding claim 22, Jamal discloses the synchronization sequences and control information are transmitted in a TDD transmission system with broadband channels (see Fig. 5, T_p/S_0 , $CpCslci_0$, T_p/S_1 , $CpCslci_1$, see col. 1, lines 42-45, TDMA for Cp Cs).

Regarding claim 23, Jamal discloses a plurality of base stations are synchronously assigned a time slot for transmitting the at least one synchronization sequence, adjacent base stations use a different time offset with respect to a start of the time slot for transmitting the synchronization sequence (see Fig. 6F, col. 11, lines 29-39, selection of different timing offset of $Cslci$), and the time offset corresponds to at least one of a selection of the at least one synchronization sequence and the order of the plurality of synchronization sequences (see Fig. 6F, col. 11, lines 29-39).

Regarding claim 24, Jamal discloses two synchronization sequences are transmitted in one time slot (see Fig. 5, T_p/S_0 , $CpCslci_0$, T_p/S_1 , $CpCslci_1$).

Regarding claim 25, Jamal discloses a time interval is predefined between the two synchronization sequences in the one time slot (see Fig. 6F, col. 11, lines 29-39, d_0 , d_1).

Regarding claim 26, wherein further information is transmitted via the base station according to at least one of the selection and order of the synchronization sequences. This claim is similar to limitations of claim 23. Therefore, it is rejected under Jamal for the same reasons set forth in the rejection of claim 23.

Regarding claim 27, Jamal discloses a scrambling code used by the base station (see Fig. 5, Cp, scramble code identifies the transmitting base station).

Conclusion

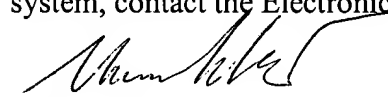
4. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure. Ostberg et al (US 6,504,830); Nystrom et al (US 6,526,091); Nystrom et al (US 6,185,244); Vayrynen (US 6,256,304); Muller (US 5,509,016); Dahlman et al (US 5,991,330) are cited to show a method and radio communication system for providing a control channel, which is considered pertinent to the claimed invention.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Lee T. Khuong
Examiner
Art Unit 2665

DUCHO
PRIMARY EXAMINER


10-28-04